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N-31217 - A modern, fully-equipped laboratory for chemical and biological tests on fire ant eradication methods and materials is housed here. A greenhouse for limited tests and for rearing fire ant colonies to be used in many of the tests is located a short distance from the laboratory.

N-31245 - Approximately 400 field plots of one-half to three acres each are utilized in developing improved treatment methods. Effectiveness, dosage, speed of action, and timing and method of application of each insecticide are studied. Here a fertilizer distributor applies insecticide to a test plot.

## Proving ground for weapons against

# FIRE ANT



The imported fire ant, which has invaded nine southern States, is the target of a cooperative eradication campaign being carried forward by U. S. Department of Agriculture and State agencies.

To advance this effort the Department's Agricultural Research Service has established a Methods Development Laboratory at Gulfport, Miss., where a team of highly trained chemists, entomologists, and plant pest control specialists are: (1) developing better and more economical formulations and dosages of the insecticides now known to be effective; (2) improving application equipment and methods of treatment; (3) screening new chemicals; (4) testing baits and attractants and (5) searching for parasites, predators, and disease organisms that might be helpful in controlling the fire ant.

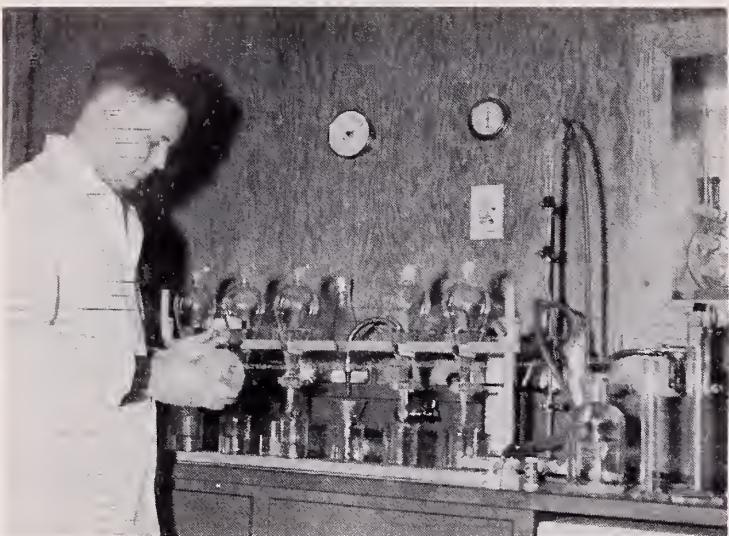
For their proving ground, the scientists have a modern, fully-equipped chemical laboratory, greenhouse facilities, and approximately 400 outdoor plots ranging in size from one-half to three acres. In addition, they have large fields totaling more than 2,000 acres for the study of control measures against natural infestations of the fire ant.

The laboratory cooperates closely with fire-ant scientists in the nine States -- Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Texas. It also maintains liaison with Federal Fish and Wildlife Service and with U. S. Public Health Service.

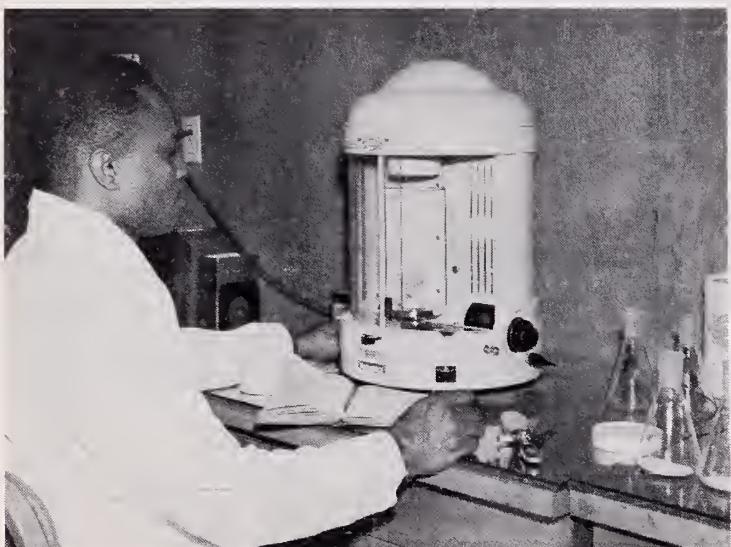
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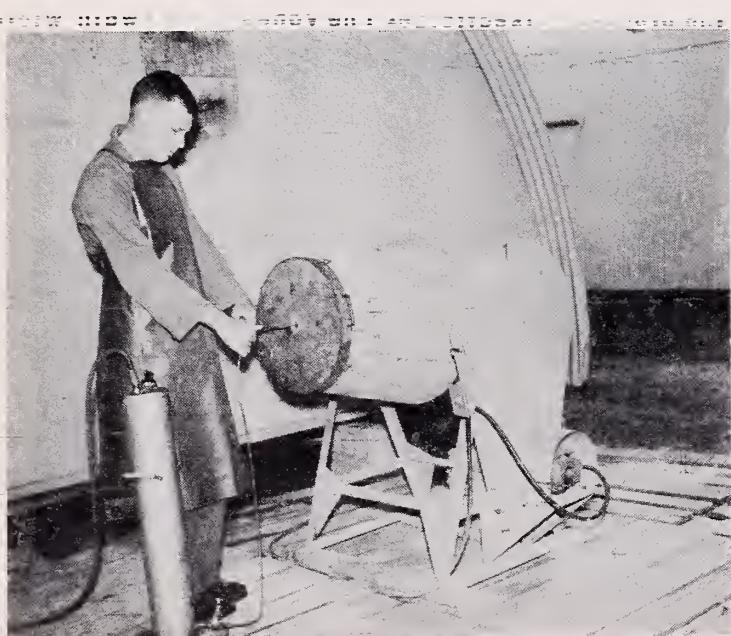
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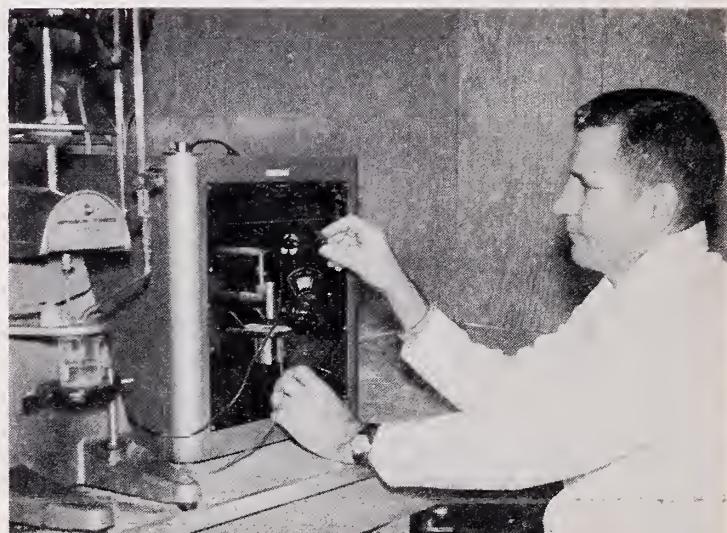
N-31211 - Chemist Robert Murphy starts a routine analysis of samples of insecticide to be used in the fire ant campaign. These tests insure that only effective chemicals are used; substandard materials are rejected.



N-31214 - The effectiveness of granular insecticides is related to the time of breakdown after application to the soil. Chemist Calvin Corley weighs a sample of insecticide granules on a sensitive electrobalance to start a long series of tests to determine their physical characteristics.

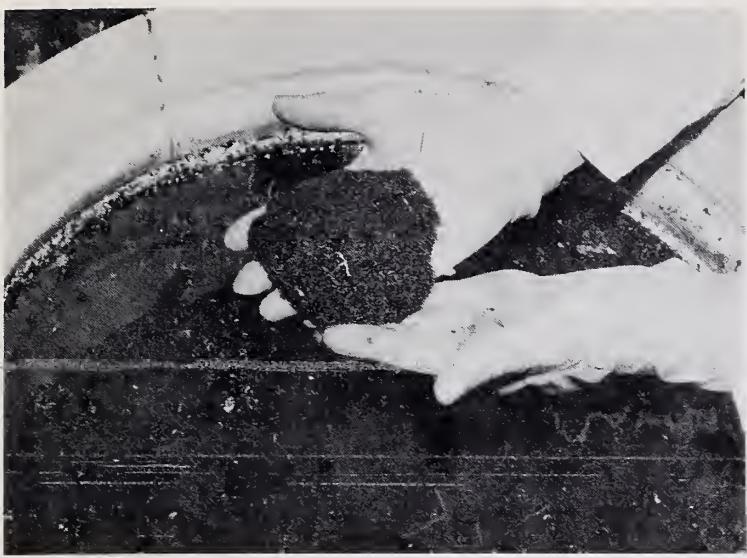


N-31224 - Mike Bishop, pest control worker, collects a soil sample from a treated area for chemical analysis to determine the insecticide residue in the soil. It is these soil residues that destroy fire ant infestations.



N-31210 - Chemist William Mitchell titrates sample of insecticide isolated from soil for chloride content to provide a basis for calculating insecticide residues. He uses an amperometric instrument which permits measurement of very small quantities of chemicals.

N-31220 - Houston Lowery, pest control specialist, impregnates clay granules with an insecticide solution, utilizing a modified concrete mixer.



N - 31242 - To establish a greenhouse colony of fire ants the scientists must capture a fertile queen. They collect ants from a natural mound in a container and add water. The ants float to the surface and are easily transferred to a jar with wire mesh top. The worker ants crawl through the mesh to reach soil, the larger queen is trapped.

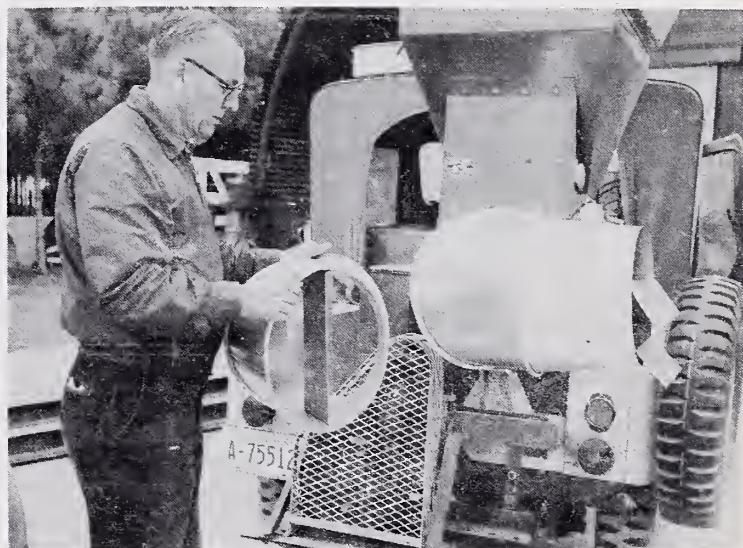


N - 31236 - Small scale greenhouse tests of insecticides and poison baits help to evaluate selected materials. Here, C. E. Stringer, Jr., entomologist, counts and records the number of dead fire ants resulting from exposure for 24 hours to soil treated with an insecticide. Small flower pots are used for these tests.

N - 31226 - Entomologist Victor Adler collects samples of grass from plots treated with an insecticide to determine the degree and longevity of chemical residues on forage. Some materials -- such as the granular insecticides being used in the current eradication effort -- do not adhere to foliage.



N - 31248 - Entomologist C. S. Lofgren places ice cream cartons containing poison baits on ant mounds to test effectiveness of the bait under natural conditions. The ant colony is examined after 24 hours to determine the rate of kill effected by the bait.



N - 31250 - Equipment specialists continue to study and modify ground and air dispersal equipment to assure that minimum amounts of insecticide can be applied uniformly. Here, R. A. Tate holds nozzle of turbine blower fitted with specially designed metal vanes developed in the equipment shop, for dispensing granular insecticide. The vanes limit swath width and obtain uniform deposit of the granules.

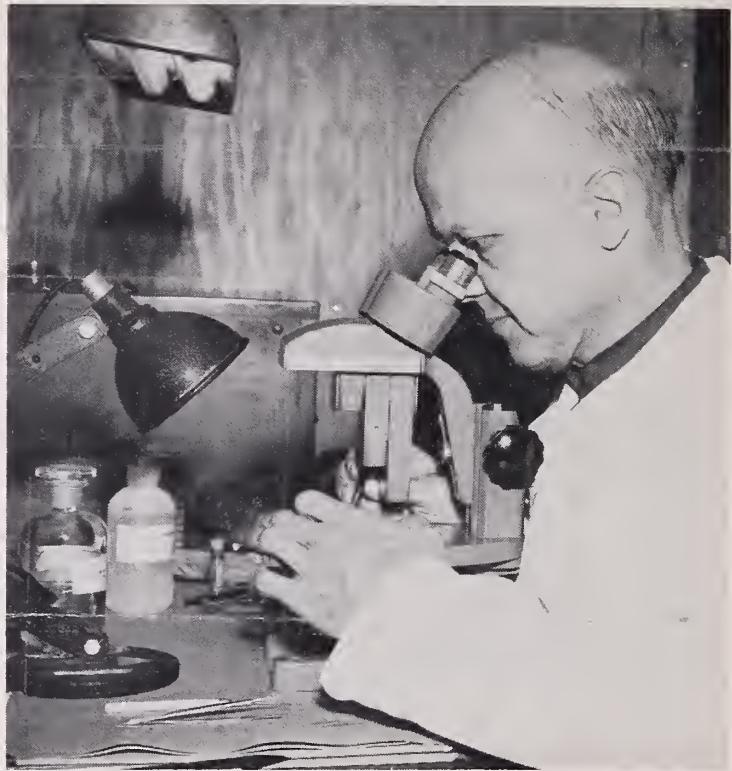




N-31530 - H. Gladney, plant pest control specialist, dips a burlap-wrapped root ball in a water-emulsion insecticide to destroy any ants that may be present. This is one of the methods developed for treating nursery stock to prevent spreading imported fire ants, when such plants are moved from infested to noninfested areas.



N-31223 - A "ball of fire"—of fire ants, that is. This mass of ants collected in a study for counting and estimating colony populations numbers a quarter million. Accurate and rapid methods of estimating ant population are necessary to assess the results of treatments.



N-31234 - Entomologist Carl H. Lauffer confirms the identification of fire ants received from field scouts. Only a trained observer can distinguish the imported fire ant from the much less destructive native fire ant.



N-31218 - Maintaining accurate records of the results of chemical analyses and, biological and field tests is an important part of the activities at the Gulfport Methods Improvement Laboratory. Miss Dolores Ladd, clerk typist, has this job.